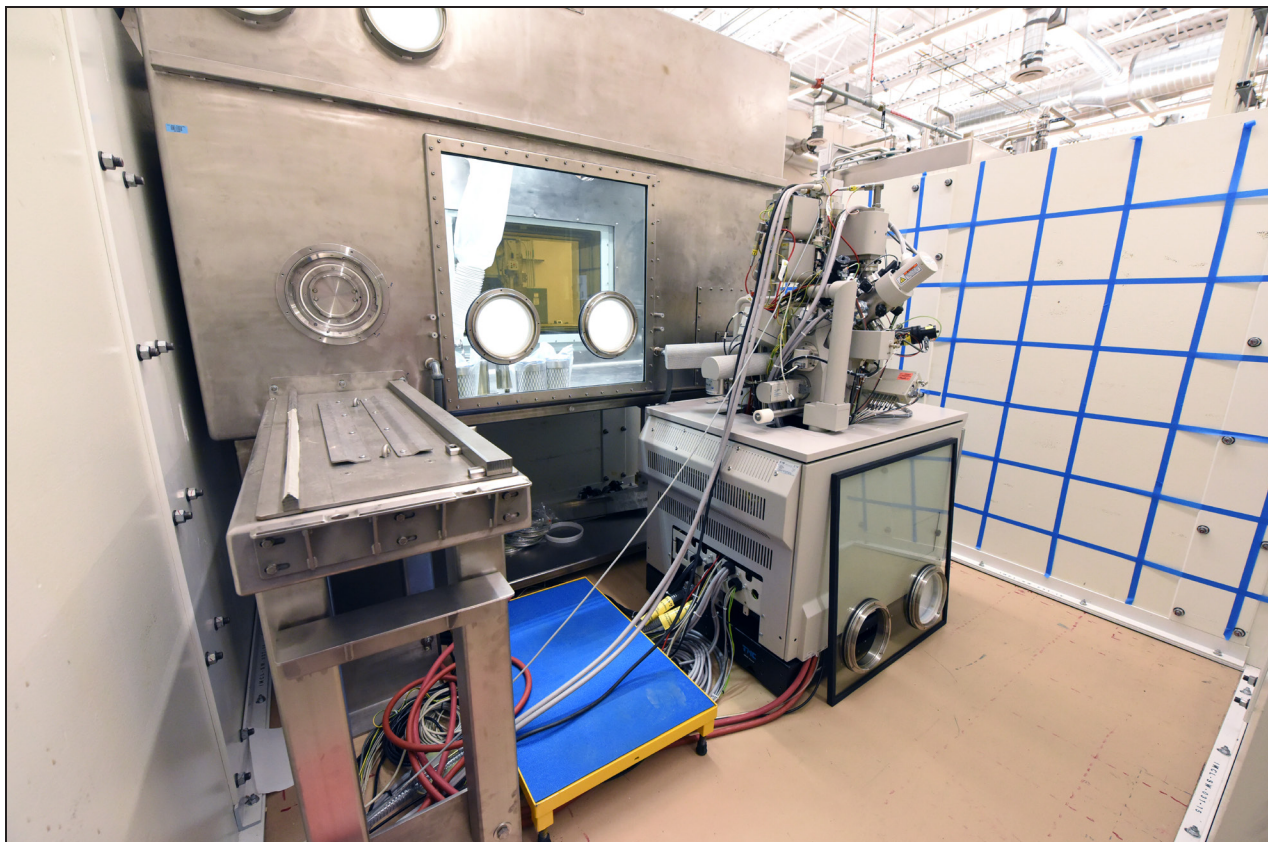




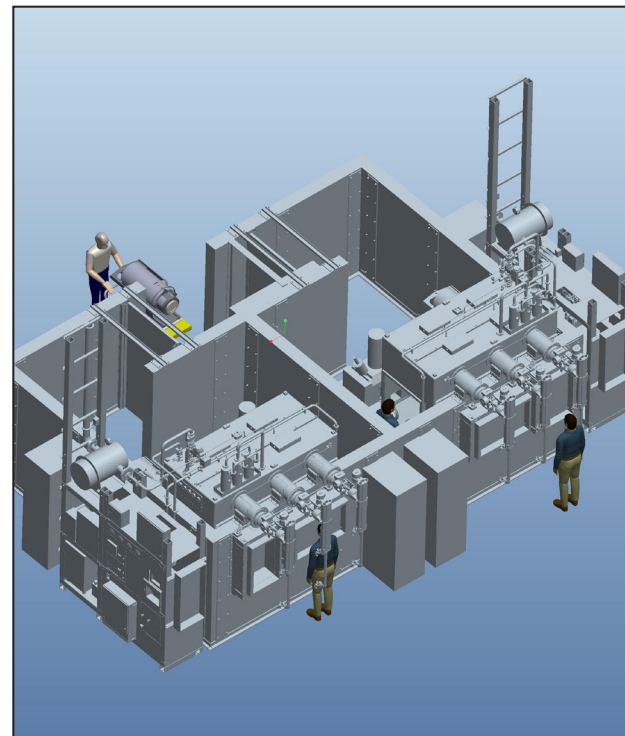
# Benchmark

## F&SS News and Progress

July-August 2017



A view from the glovebox side. A cask containing an irradiated sample will be placed on the rack to the left and docked to the glovebox. Working with manipulators on the hot cell side, researchers will open the docking port and take out the sample for examination in the glovebox/hot cell.



3-D rendering of the SEM and FIB glovebox/hot cells. When the source is in the main workspace, researchers can work safely from the hot cell side using manipulators. Fine hands-on work can be done from the glovebox side with the source safely stowed in a well.

## INL team lauded for IMCL glovebox/hot cell design

By Steve Swanson and Karen Bass

An INL Applied Engineering team is receiving national attention from the nuclear fuel examination industry for developing a new series of hybrid glovebox/hot cell systems.

With cooperation of F&SS leaders and management at the Materials and Fuels Complex, they completed their innovative work ahead of schedule at the MFC Irradiated Materials Characterization Laboratory.

The IMCL gives researchers the ability to prep and examine irradiated nuclear fuels and other materials with an array of highly advanced characterization instruments in one facility.

While similar characterization equipment can be found in other facilities, IMCL is the first to create a truly reconfigurable high radiation examination laboratory.

“Most facilities have permanent infrastructures to support shielding and confinement, making it costly to retrofit the systems once the mission changes or new equipment becomes available,” said Steve Swanson, systems design and project engineer. “This system is completely unique and forward thinking.”

Swanson was handed the job of making the flexible concept work when he came on board the project about four years ago. “The first words I heard from my project manager were ‘world class,’” Swanson said. “They had a vision for a flexible high-radiation laboratory; something that had not been done at

INL before, and maybe not in all of DOE.”

Project goals included using the latest and most sensitive material characterizing equipment available, along with adding the ability to use that equipment as never before (with high radiation fields). Furthermore, the flexible system had to allow for upgrading the laboratory to newer instruments, while accepting and sending materials to other facilities such as the Hot Fuel Examination Facility (HFEF) at MFC.

The system includes a series of gloveboxes/hot cells with manipulators, shielded casks to safely move material in and out of these spaces, state-of-the-art characterization instruments, and shielding to protect workers.

By design, the shield walls can be completely reconfigured, like a giant Lego set; a wide range of instruments can dock with the gloveboxes, due to the large access panels on the backside of the units; and if necessary, each glovebox and control rack system can be easily removed and replaced to support new missions.

Characterization instrumentation – including a plasma focused ion beam (PFIB), a dual-beam focused ion beam (FIB), and electron probe micro-analyzer (EPMA) – are docked directly to the hybrid system. “We are using these instruments in an entirely new way,” Swanson said. “To our knowledge, these instruments have never been used with these types of radiation fields. We are treading new territory.”

By combining gloveboxes and hot cells in one unit,

the IMCL system is designed to take advantage of the best of both worlds. Fuel experiment material arrives at the facility in a shielded cask and is docked to the glovebox side. Workers will transfer the material from the cask into the glovebox using manipulators while they are safely shielded behind steel and shield glass. When there is a need to do maintenance, repairs, or fine work not easily achievable with manipulators, the source material can be removed or safely stored away in the glovebox’s thick shielded storage wells. Once the material is stored and covered, radiation levels will drop to acceptable limits and workers can complete hands-on prep work through gloveports before retreating back behind the shielding to use the manipulators to retrieve the source to continue work.

Swanson’s team faced several challenges as they planned the system. “As a team, we had to consider a new workflow for the experimenters, as the radiation fields would no longer allow the samples and instruments to be prepared, loaded, or operated by hand,” he said. “Experimenters would now have to stand behind two feet of shield glass and use manipulators. This required the consideration of material storage, equipment modifications for remote manipulation, and controls outside of the shielded area. It was a challenge, because we didn’t have to just consider all of the normal glovebox attributes, but we had to

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FACILITIES AND SITE SERVICES

F&SS



# F&SS takes leadership development to higher level

Since fall 2015, supervisors in the Facilities and Site Services organization have spent at least one day each quarter working together in a forum environment to improve their leadership skills. The supervisor forums give participants a safe place (no upper management allowed) to air concerns, learn and practice communication tools, and role play in scenarios based on real life. Once they leave the forum, they are expected to continue working on the concepts they have learned, practicing communication tools and putting their new skills to work.

Recently, F&SS launched a similar forum series for mid-level managers. The organization held the sixth supervisor forum on June 21, and followed it the next day with the first manager forum. Like the supervisor forums, manager forums are designed to cover topics chosen by participants, ensuring they are relevant and helpful.

“The forums are a way for us to keep the momentum going after people come back from Laboratory Operations Supervisory Academy training,” said Carlo Melbihess, F&SS director. “Forty-five front-line supervisors from F&SS have attended LOSA training so far. They come back energized, with tools they want to apply to working with their folks.” The forums were created to help keep that energy going.

“The ultimate goal of the forums is to establish a just culture in F&SS; an environment where supervisors and managers trust each other, trust that I have their back, and I can trust that they have my back,” said Ed Anderson, F&SS deputy director. “Trust results in happy employees, it results in engagement, it results in safer behaviors. Along with that we are trying to grow our capabilities and skills by giving our people opportunities to grow and improve.” Supervisors were a little concerned before the first forum, but their misgivings ended by the time that forum was over. “After six forums, supervisors see the value and engage very energetically.”

In a recent iNotes (June 22), INL Director Mark Peters explained that INL is creating a culture of professional development in which employee development will be a strategic priority for the Lab, and part of the INL Strategic Plan/Lab Agenda. Employee development will be a performance goal for all managers. INL will reinforce management accountability for fostering employee development, and the Lab will create multiple experiences to help individuals learn and grow. Rod Bitsoi, Site-wide Facilities and Operations director, is part of INL’s pilot Advanced Leadership Development program. The group has been working with senior INL management to help institutionalize this culture of development across INL.

“INL is making an enduring commitment to people,” Bitsoi said. “This is not going to be a flavor-of-the-month thing – this is going to be the way we do business; the way we attract and retain and engage employees. Recurring learning days such as the F&SS supervisor and manager forums will help provide what managers need to know right off the start to put them in the best position to help train, help develop, help grow people the way they need to be grown at INL.”

Bitsoi helped put together the first supervisor forum. “It’s a pretty hard transition, going from employee to supervisor. I think the forums are doing a good job of training them in the skills they need to be effective supervisors,” he said. “The other leap is going from front line to manager – it takes a totally different set of skills. Strategic planning, budgeting, mentoring and coaching – these aren’t roles they are used to. The manager forums will focus on some of these unique skills.”

The forums address issues and topics selected by supervisors and managers. Forum activities are deliberately designed to pull participants out of their comfort zone. Returning guest and globally noted organizational speaker Dan Miller told managers, “Behavior change is not for the faint of heart – if you are a leader of any kind, you need to be comfortable with being uncomfortable. And you need to be



Guest speaker Dan Miller leads F&SS managers in a discussion on forum goals and expectations.

*“The ultimate goal of the forums is to establish a just culture in F&SS; an environment where supervisors and managers trust each other, trust that I have their back, and I can trust that they have my back.”*

— Ed Anderson,  
F&SS deputy director

comfortable in the presence of other people who are uncomfortable.”

Preparation starts weeks before the forum actually takes place, as managers and supervisors begin to think about and discuss concerns they want to address. In Dan Miller parlance, this is called “tilling the soil.” Managers tilled the soil for their forum in a May meeting (see May-June 2017 Benchmark) as they discussed concerns and forum objectives.

Following each forum, F&SS managers and supervisors are encouraged to regularly revisit the key concepts addressed in the forum with their teams, avoiding the dread “sheep dip” training approach (one day of training with no follow-up is like sheep dip – the bugs will come back). Miller’s solution is called “stirring the paint” – deliberately setting goals, applying the skills learned in the forums, and regularly interacting with an accountability buddy to stay on track.

The ultimate goal of both supervisor and manager forums is leadership development — equipping supervisors and managers to be better leaders, ensuring they are ready for the inevitable succession that occurs as INL’s older folks retire.

Jeff Heath, F&SS chief of staff, is spearheading the manager forums. “Leadership development focuses on advancing three kinds of skills,” he said. The first area includes technical skills – how to fill out a time-card, when to go to HR, understanding the contract.

The second area involves applied skills. “If I’m going to learn how to work through a conflict, how do I get the practice to do that in a safe environment? The supervisor forums are based on that applied concept,” Heath said.

The third skill is based on game theory. In a finite game, all players and rules are known and the goal is to finish the game – think checkers or chess. In an infinite game, the goal is to perpetuate the game – to play another day. “Players and rules change and you must be able to adapt,” said Heath. “There are certain



Miller’s animated delivery encourages and inspires forum participants.

skills that you need in order to make that adaptation. We play this game together, and if one of us has a shortfall, we all help them see it.” The management forums are based on this concept, and will address questions such as “How do you prepare a workforce to learn?” “How do you increase engagement?” “Why does talking with your employees regularly matter?”

The manager forums will draw on material from MBA programs of elite universities and the Arbinger Institute. Heath, one of only two Arbinger-certified trainers in the state of Idaho, said learning Arbinger concepts will help with all relationships, both work and personal.

At the end of the first manager forum, Miller went around the room asking managers what their closing comments were. Comments included: “I thought this was good...lots and lots of food for thought... it’s good to get some of these tools and know what the supervisors are learning – we all have common goals...this references some important stuff we need to focus on – it’s good to be able to bounce stuff off of someone else...all about human dignity and respect...refreshing and invigorating.”

Miller commented to the group that the day was much more successful than he had expected. “I’m impressed by all of you and how much you want to get better for your people,” he said. “Look forward to getting involved!”

The rest of INL is starting to take notice. “ATR is starting to spin their forum program up with one of our founding members, Randy Williams,” Anderson said. “We’ve plowed a path that could and should be followed.”

“I’m extraordinarily excited about the investment we are making in the growth of our leaders and managers,” said Melbihess. “The hope is that this will help our managers develop and progress – the forums are complementary to our succession planning.”



# Mary Dee Grimm commemorates 55 years at INL

By Mikhaela Smith

On any given day, Mary Dee Grimm can be found crunching numbers in her office at the Willow Creek Building (just follow the infamous trail of baby powder that leads to her office). She has been a fixture at INL for more than half a century.

Grimm began working out at “the Site” when she was only 18 years old. She was fresh out of high school, and John F. Kennedy was president at the time.

“When I graduated from high school, I did not have enough money or funds to go to college,” said Grimm. “So I thought I would just go to work for a year.”

There was only one in-town facility at the time, which meant that Grimm was required to work at the Site.

“Almost everyone was co-located at the Site, which allowed us to become very close. The bus tickets were 25 cents each way, and smoking – or playing cards – were allowed on the buses.”

Grimm worked as a technical editor; a position that allowed her to meet some of INL’s finest minds.

“There are a couple of individuals that I worked with, whose names are now part of the Distinguished Postdoctoral Appointees program. Both of them are deceased, but I worked with Dr. Russell Heath and Dr. Deslonde de Boisblanc because they published a lot of papers. I did the tech editing for them. Here I am, 18, doing the tech editing for men at the forefront of nuclear.”

After working for a year, Grimm left her job to attend school at Utah State University. She was only able to attend for a short time before a lack of funds, and her love for shoes, forced her to quit.

“Unfortunately, I had not considered how much money it was going to take to go to school, and they did not have loans or anything like that back then; you either were able to pay at the time or you weren’t. I only lasted a couple of quarters before my money ran out. One of my problems was that I used to go to downtown Logan, where they had the neatest little shoe shop. It was all downhill from there.”

Grimm says not finding a way to finish school is one of her biggest regrets, although it has never held her back.

“I have been extremely fortunate. My bosses have



Mary Dee Grimm is known for her distinctive desktop organization system.

been very supportive and never told me I could not do something. I have been very lucky in that way. I think it would be really difficult today to do that without a degree.”

After leaving school, Grimm returned to her editing job. She continued working at the desert Site for a few years before transferring to an in-town facility. It was there she began doing work that allowed her to become a business manager.

“She is very fiscally responsible,” said Carlo Melbihess, F&SS director and Grimm’s current boss. “We have arguably the largest indirect and capital budgets at the lab, and it’s all in her head. When it comes to fulfilling her role as business manager and the fiscal responsibility you have from an accounting standpoint, she is consistent and always by the book.”

Grimm has always shown a strong amount of dedication to her work. She shows an equally strong amount of dedication to her employees.

“What I admire about her is how she takes care of

her people,” said Melbihess. “She cares for them and develops them. It’s very admirable how she does that. Because of that, her staff loves working for her. They are very loyal.”

One of Grimm’s employees, Rachel Burch, has experienced Grimm’s commitment to her employees first hand.

“She is very personable and she cares about her employees as individual people. She wants you to be involved with your family and children, but she also wants to help you develop professionally; she is good about giving you opportunities to grow, and a lot of people have enjoyed working for her.”

Grimm says the secret to keeping her employees happy is simple.

“People will respond well if they feel they can trust you. I’ve never been a dictator; I just do not believe that works. People need the freedom to branch

*Continued on back page*

## REC Facilities & Operations team celebrates slam-dunk year

The Facilities and Operations team at REC, including team members from Battelle Energy Alliance, System 1, Wolverine Electric, L&L Mechanical and Wheeler Electric, got together on July 14 to celebrate a great year of work with a potluck and fundraiser in Freeman Park.

“We couldn’t be successful without our subcontractors and BEA employees working together,” said Scott Lyman, REC Facilities & Operations director.

REC management (David Lively, Brad Ritchie, Kevin Brown and Lyman) bought the meat, L&L Mechanical and Wheeler Electric owners contributed food, and employees brought their favorite dishes as around 100 team members participated in the event, which included the chance to dunk managers and co-workers.

The party was the latest in a series of quarterly team-building activities designed to strengthen morale, have fun, and help raise money to assist those in need. These events are planned by the REC “culture” team led by Kevin Brown. The team consists of IRC crafts, subcontract crafts, BEA staff and management. Other culture team members include Dusty Hawker, Robert McAteer, Kevin Wells, Tom Hardy, Scott Lyman, and three subcontractors: Luke Carpenter, Josh Nichols and Robert Stamper.

Mechanic Jim Barnes suggested bringing in the



Scott Lyman, REC Facilities & Operations director, didn’t stay dry for long. Photos by Joy Kibbee

dunking booth, which proved to be a huge success.

“Everybody got one free shot,” said Lyman. “After that, they paid \$1 a ball. We raised \$400 in just two hours.” The money was donated to the College of Eastern Idaho (formerly Eastern Idaho Technical College) to help with scholarships.



Carlo Melbihess, F&SS director, took a turn in the dunk tank. Melbihess, who serves on EITC’s Foundation, said the eastern Idaho community has raised \$56,000 so far for the CEI scholarship fund.



# BIG SHOP



# ENERGY INNOVATION LAB





# F&SS Power Management teaches electrical safety to Sho-Ban youth



Ken Barnes, manager of Facilities and Site Services Power Maintenance, assisted by intern Daniel Allen, used “Power Town,” an electrified scale model of a town, to discuss electrical safety with two groups of Shoshone-Bannock youth – junior and senior high school students participating in Sho-Ban Summer Youth and members of the TRIO Codetalkers. The presentation was part of a day of STEM exploration for the students that included presentations in CAES and a tour of the INL Big Shop.



Above and below, Power Town, an electrified scale model of a town, demonstrates many electrical hazards people may encounter.



## News in brief

### F&SS service anniversaries for July, August

- 55 years: Mary Dee Grimm
- 30 years: Gary Packard, Amy Wasia, Stanley Zohner
- 25 years: William Green, Risden Neeser
- 15 years: Thomas Clayton
- 10 years: Kelly Ellis, Douglas Hardin, Rickey Koster, Michael Larsen, Troy Steinlicht

### REC Fabrication Services manager honored for military support

Mike Barton, REC Fabrication Services manager, was nominated by Thomas Lewis, REC Fabrication Services Precision Fabrication & Design tech and active member of the Army National Guard, to attend a conference titled Boss lift.

This event is sponsored by ESGR (Employer Support of the Guard and Reserve) and serves as a bridge between civilian employers and citizen soldiers. Those selected to attend the event support employees who are active members of the National Guard and Reserve. They are encouraged to learn more about what soldiers do, and can gain hands-on experience with military aircraft, weapons, flight and weapons simulators, and participation in briefings on current missions and commitments.



Mike Barton with an A10/QA-10 Thunderbolt aircraft.

The event took place in Boise at Gowen Field and included all branches of the Reserve forces at a single location – Army National Guard, Army Reserves, Air National Guard, Navy Reserves and Marine Reserves.



## WCBest safety walk

Employees enjoyed some refreshments and learned ways to stay physically active at the WCBest Safety Walk on July 19 in Freeman Park.





# F&SS employees help children at special camp

Everyone knows that Ed Anderson, Facilities and Site Services deputy director, loves mountain climbing. But there’s something he loves even more – teaching climbing at Camp Magical Moments, a weeklong camp for children living with cancer. Anderson’s wife, Sandy, joined him this year, his eighth to help with the program. “It’s the best day of my year, every year,” he said.

Camp Magical Moments, now in its 13th year of operation, was established in Swan Valley in 2005 by Ann Walsh, a former state director of the American Cancer Society. INL Laboratory Fellow David Nigg was a rock climbing instructor for Boy Scout Troop 382 in Idaho Falls at that time. He helped set up the climbing program and has coordinated it every year since then. The Andersons worked with Nigg teaching campers how to climb on the original wall as well as on the climbing/rappelling tower built a few years ago by Team INL.

Bud (T.K.) Robinson, a maintenance planner in Site-wide Operations, has taught archery to Camp Magical Moments campers for “a long time.” He owns Downwind Archery of Idaho Falls and has worked with scouts and other youth groups for many years. Walsh invited him to start an archery program for the campers several years ago. Robinson teaches the kids how to aim and draw the bow, providing 3-D and regular targets for them to practice on.

## IMCL

*continued from front page*

consider hot cell attributes as well.”

The team also mulled how irradiated samples were going to come into the lab space. Applied Engineering oversaw the development of a new shielded container that could dock with the glovebox/hot cell systems and be opened with manipulators. The small cask is rated for fire hazards as well as a 30-foot drop and can be loaded into the HFEF decontamination cell. Once decontaminated, it can be transported to IMCL with a forklift.

Applied Engineering developed the functional, operational and technical requirements, developed the conceptual design and design/build specifications for the gloveboxes/hot cells; developed and installed support gas and suspect exhaust equipment for IMCL, and brought the instruments into the facility. Finally, the team oversaw the installation of the new equipment and contributed to readiness activities for the facility.

“One thing that I am very proud of is the rate at which the work was completed,” Swanson said. “We designed, fabricated, and installed three glovebox/hot cell systems for IMCL in less than two years, while also designing, building, and installing a new Transmission Electron Microscope room and instrument in the same laboratory. On average, it takes longer than this to get one glovebox into another facility, and we did three. I am very pleased with what the team was able to achieve.”

The original schedule for the installation of the equipment was accelerated by three months. F&SS management coordinated with MFC management, helping set staffing priorities to ensure installation proceeded smoothly and project milestones were met. “This was a great example of senior leadership working together to make a project successful,” Swanson said.

The logistics of installing three systems simultaneously was challenging. The heavy shield wall panels were each lifted into place with a crane, and the placement sequence required careful planning so that subsequent equipment installation wasn’t blocked.

IMCL is designed for examination of material following experiments in reactors such as the Advanced Test Reactor or the Transient Reactor Test (TREAT) Facility. Following irradiation, the material will be removed from the reactor and taken to the IMCL, where it will be prepped for nondestructive and destructive examination to gain an understanding of how it has been affected by irradiation.

Camp Magical Moments provides a safe and fun week for children whose everyday lives are often anything but fun as they deal with major medical challenges. The camp is free to the kids, and volunteers from all over the country come together to help provide truly magical moments for more than 30 children each year.

Team INL has been providing support to the camp’s climbing program every year since 2007, including building and maintaining the tower and maintaining a supply of child-sized climbing harnesses, ropes, helmets, hardware and other safety equipment, some of which is specialized for the childrens’ particular safety needs. Several other INL employees have also volunteered their time over the years to help at the camp. In 2015 INL’s Camp Magical Moments team received a Laboratory Director’s award for their ongoing efforts. “Many of these children at first don’t believe they could climb given the challenges of their medical condition,” Nigg said. “But nearly all quickly find out to their delight that they can, just the same as any other children, and then they can’t wait to come back for more.”

“It just blows me away, how polite the kids are to each other,” Robinson said. “You look at things in a different way when you get back from helping at Camp Magical Moments.”

[Click here](#) to see the thank-you note from Camp Magical Moments to this year’s INL volunteers.



**IMCL Shift Supervisor Jeffrey Bailey demonstrates manipulators on the hot cell side. The blue tape was used to map radiation levels, and will be removed for normal operations.**

# Mary Dee

*continued from Page 3*

out and become an integral contributor to the program or project they support.”

In addition to being a hardworking employee, Grimm has been known to have a fun sense of humor.



**Mary Dee Grimm**

Theron McGriff used to work in an office next to Grimm. During that time, McGriff learned that Grimm is not shy when it comes to asking for what she wants.

“My office was next door to Mary Dee for a few years, and I learned very quickly that you have to be careful when offering to share things with Mary Dee.”

McGriff recounted an instance when he mistakenly offered to give Grimm one of her favorite things in life; a pair of shoes.

“Typically, in the summer, Mary Dee wears flat loafers. Well, one day, I wore this really comfortable pair of denim loafers to work. It was the first time I wore them to work, and Mary Dee immediately noticed them and said, ‘I want those shoes.’ I told her, as a joke, that she could have them. When I returned from lunch later that day, I found her standing in my office waiting for me give her my shoes. It was the middle of the summer, but I gave her the shoes and wore the snow boots I had sitting in the corner of my office. I wore those boots for the rest of the day – all because she took my shoes. She still has them, and sometimes I even see her wear them to work.”

Some of Grimm’s other quirks include her unique paper organization system that encompasses her desk, as well as the infamous eye twitch she gives those who dare to cross her path.

If she ever decides to retire, Grimm hopes she leaves behind a positive legacy.

According to Melbihess, Grimm has already achieved that legacy.

“She is more than a manager. I think she is a friend, a guardian, a mentor and someone her staff admires. What more could you ask for in a boss?”

Of course, Melbihess says Grimm is not allowed to retire until she cleans up her desk.

## Benchmark

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Benchmark highlights news and achievements of the Facilities and Site Services Directorate at Idaho National Laboratory.

